

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* VENKATESH KRISHNAN, GEETHA MANSUNATH,  
and K. S. VENUGOPAL

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Appeal 2007-0247  
Application 09/264,756  
Technology Center 2100

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Decided: April 23, 2007

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Before JAMES D. THOMAS, KENNETH W. HAIRSTON, and JOSEPH L.  
DIXON, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 20-46.

We REVERSE.

## BACKGROUND

Appellants' invention relates to class loading in a virtual machine for a platform having minimal resources. An understanding of the invention can be derived from a reading of exemplary claim 20, which is reproduced below.

20. A virtual machine, comprising:

class loader that enables the virtual machine to obtain a set of classes via a network as needed while executing an application program, the class loader converting the classes obtained via the network into a predefined class definition format and then storing the classes into a class structure in a memory such that the classes stored in the class structure are represented as a set of arrays and references of the predefined class definition format;

memory manager that selects and purges the arrays and references of the classes from the class structure so as to minimize an amount of the memory consumed by the class structure and to minimize class loading activities on the network.

### PRIOR ART

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

|             |                 |               |
|-------------|-----------------|---------------|
| Shaughnessy | US 5,787,431    | Jul. 28, 1998 |
| Ebrahim     | US 5,848,423    | Dec. 8, 1998  |
| Bak         | US 5,999,732    | Dec. 7, 1999  |
| Brown       | US 6,295,643 B1 | Sep. 25, 2001 |

### REJECTIONS

Claims 20-22, 25-28, 31, 32, 35-37, 40-41, and 44-46 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bak in view of Ebrahim.

Claims 23, 24, 33, 34, 42, and 43 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bak in view of Ebrahim and further in view of Shaughnessy.

Claims 29, 30, 38, and 39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bak in view of Ebrahim and further in view of Brown.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellants regarding the above-noted rejections, we make reference to the Examiner's Answer (mailed Dec. 01, 2005) for the reasoning in support of the rejections, and to Appellants' Brief (filed Jul. 13, 2004) and Reply Brief (filed Dec. 6, 2004) for the arguments thereagainst.

## OPINION

In reaching our decision in this appeal, we have given careful consideration to Appellants' Specification and claims, to the applied prior art references, and to the respective positions articulated by Appellants and the Examiner. As a consequence of our review, we make the determinations that follow.

At the outset, we note that to reach a proper conclusion under § 103, the Examiner, as finder of fact, must step backward in time and into the mind of a person of ordinary skill in the art at a time when the invention was unknown, and just before it was made. In light of all the evidence, we review the specific factual determinations of the Examiner to ascertain whether the Examiner has convincingly established that the claimed invention as a whole would have been obvious at the time of the invention to a person of ordinary skill in the art. When claim elements are found in more than one prior art reference, the fact finder must determine "whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims." *In re Kahn* 441 F.3d 977, 988, 78 USPQ2d 1329, 1337 (Fed. Cir. 2006). With respect to the role of the Examiner as finder of fact, the Court of Appeals for the Federal Circuit has stated: "the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The Court of Appeals for the Federal Circuit has also noted: "[w]hat the prior art teaches, whether

it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references are questions of fact.” *In re Fulton*, 391 F.3d 1195, 1199-1200, 73 USPQ2d 1141, 1144 (Fed. Cir. 2004) (internal citations omitted).

Further, as pointed out by our reviewing court, we must first determine the scope of the claim. “[T]he name of the game is the claim.” *In re Hiniker Co.*, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998). Therefore, we look to the limitations as recited in independent claim 20 which recites “memory manager that selects and purges the arrays and references of the classes from the class structure so as to minimize an amount of the memory consumed by the class structure and to minimize class loading activities on the network.” Appellants argue that the combined teachings of Bak and Ebrahim do not disclose or suggest the claimed purging arrays and references of the classes from the class structure so as to minimize an amount of the memory consumed by the class structure and to minimize class loading activities on the network (Br. 6-8). We agree with Appellants and find that the general teachings of Ebrahim with respect to garbage collection and reclaiming unused portions of a memory heap is not a class structure as maintained by the Examiner (Answer 11). Appellants argues that the heap of Ebrahim is not a class structure, but instead contains instances of classes obtained from a separate class repository (Br. 7). We agree with Appellants that the garbage collection taught by Ebrahim does not reduce the size of the heap, but merely cleans up what is in the heap. Therefore, the Examiner has not shown that all the limitations of instant independent claim 20 are taught or fairly suggested by the prior art.

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Therefore, the Examiner has not met the initial burden of establishing a prima facie of obviousness, and we cannot sustain the rejection of independent claims 20, 31 and 40 and their dependent claims.

### CONCLUSION

To summarize, we have reversed the rejection of claims 20-46 under 35 U.S.C. § 103(a).

REVERSED

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